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## Bioavailability of Echinacea alkamides in human breast milk

A Matthias <sup>1</sup>, H Merika <sup>2</sup>, RS Addison <sup>3</sup>, KM Bone <sup>1</sup>, RP Lehmann <sup>1</sup><sup>1</sup>MediHerb Research Laboratories, 3/85 Brandl Street, Eight Mile Plains, Brisbane, Queensland 4113, Australia<sup>2</sup>23 Helene Street, Eltham, Melbourne 3095, Australia<sup>3</sup>TetraQ, The University of Queensland, Royal Brisbane Hospital, Brisbane, Queensland 4029, Australia

Congress Abstract

Echinacea is an herbal medicine that is widely used as an immunomodulator and in the prevention and treatment of colds and minor infections. Although alkamides found in medicinal preparations of *Echinacea angustifolia* and *Echinacea purpurea* have been shown to be present in blood after oral ingestion [1,2], their presence or absence in the milk of lactating women is unknown. The concept of treating infants by medication of the lactating mother is widely followed in naturopathy, as this gives a means of delivering the required low doses to the infant with the added advantage of having been 'filtered' by the mother. In alleopathic medicine, absorption of compounds into breast milk is also important from the perspective of safety of the infant to medications taken by the mother.

In this study, we have examined human breast milk from a 35 year old volunteer at six different time points after ingestion of four Echinacea Premium tablets. Each tablet was comprised of the equivalent of 675mg of *Echinacea purpurea* root and 600mg of *Echinacea angustifolia* root prepared from the dried ethanolic extracts of the two *Echinacea* species. The volunteer ingested 13.1mg of the N-isobutyldodeca-2E,4E,8Z,10E/Z-tetraenamide alkamides.

The alkamides were found to be present between 1 and 4 hours after ingestion of the Echinacea Premium tablets. Concentrations in breast milk were similar to those previously reported in plasma after ingestion of a similar dose and tablet preparation [1]. This shows that alkamides are present in human milk after ingestion of Echinacea preparations and are passed to the infant during feeding.

References: 1. Matthias, A. et al. (2005) Life Sci 77:2018–2029.

2. Woelkart, K. et al. (2005) J Clin Pharmacol 45: 683–689.



### Article Citations

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